

**PROCESSING COPY****INFORMATION REPORT INFORMATION REPORT****CENTRAL INTELLIGENCE AGENCY**

This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

**SECRET**

25X1

**COUNTRY** Poland**REPORT****SUBJECT** The Nowy Dwor Zinc and Lead Mine  
near Bytom**DATE DISTR.** 1 February 1956**NO. PAGES** 1**REQUIREMENT NO.** RD**REFERENCES****DATE OF INFO.****PLACE & DATE ACQ.**

25X1

**SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.**

A report containing information on the Nowy Dwor zinc and lead mine near Bytom (Beuthen) (N 50-21, E 18-58).

The report describes the mine, the flotation plants and other installations connected with the mine, the mining tools used, the power supply, and gives actual and planned production figures. Sketches of the layout and of certain mining installations are included.

25X1

25X1

Distribution of Attachment (text, 16 pages; 4 sketches

25X1

25X1

**ENCLOSURE ATTACHED  
PLEASE ROUTE**

1 MAR 1957  
26 MAR 1957  
27 MAR 1957  
16 APR 1957

16 APR 1957

Ly/50

46

**SECRET**

STATE	X	ARMY	X	NAVY	X	AIR	X	FBI	AEC	ORR	ET	X
(Note: Washington distribution indicated by "X"; Field distribution by "#".)												

Nowy Dwor Mine which produces zinc and lead is located on the north- 25X1  
west periphery of the city of Bytom (formerly Beuthen), Upper Silesia, on the  
road leading from Bytom to Radzionkow. Prior to 1945, when German Silesia came  
under Polish administration, the mine was called Neuhof Grube and was owned by  
the Schlesische Bergwerke und Huetten A. G., Beuthen. This company also owned  
the Neue Viktoria, <sup>and</sup> Bolko <sup>zinc and lead</sup> Mines, the Dimitroff Coal Mine, as well as a zinc  
foundry at Jedlice. <sup>and</sup> The Nowy Dwor Mine has been in existence for approximately  
one hundred years. In 1945 when German Silesia came under Polish administration  
much of the industrial plant equipment in the area was dismantled by the Soviet  
authorities. Among the lead and zinc mines so affected was Marchlewski Mine,  
which was almost totally stripped of machinery which was allegedly shipped to the  
Soviet Union. When the rehabilitation of ~~Silesia~~ Silesian industry was begun by  
the Polish authorities in late 1945, it was decided to reopen the pits at  
Marchlewski first, which was accomplished by dismantling what machinery had been  
left at Nowy Dwor. Accordingly, Nowy Dwor Mine remained dead until 1949 when it  
began to be fitted with completely new machinery. The outfitting of the mine is  
still incomplete and must be enlarged, especially as regards the flotation works

SECRET

25X1

if the mine is to process the ores stock piled in the area.

## 2. Size and Physical Plant.

Nowy Dwor Mine covers an area of five hundred square meters and consists of two flotation plants, two mine shafts, one mechanical workshop, one carpenter workshop, one warehouse, a two-story mess hall, a bath house and an administration building (under construction). The two mine shafts, both of which existed prior to World War II, are designated as "the new shaft" and "the old shaft", the terms indicating only that one was constructed after the other. The "new shaft" which is equipped with an electrically powered hoisting apparatus installed prior to World War II and not dismantled after the war is currently being fitted with a reinforced cable scaffold. The "old shaft" is equipped with a steam operated hoisting apparatus and ropes rather than cable. The pits are ninety-six meters deep.

## 3. Working Force.

[redacted] the labor force employed 25X1  
at Nowy Dwor [redacted]

[redacted] the total figure is twenty  
five hundred, of whom seventeen hundred work below ground in the pits and the  
remainder on the surface. The two flotation works employ forty-six persons each  
per shift. The administrative and management personnel number approximately two  
hundred sixty. Prior to 1945 ten persons only were employed on the administrative  
staff. No prisoners or soldiers are employed at Nowy Dwor.

## 4. Work Tools and Power Supply.

All underground extraction is done by means of "normal" equipment, i.e.,  
by pneumatic drills and hand tools. The plant is plagued by recurring shortages

SECRET

SECRET

25X1

of the most elementary supplies, e.g., track for the pit railroads and spikes and nails for the underground timber shorings. Electrical current is supplied to the mine by two cables from Katowice, terminating at step-down transformers which reduce the six thousand volt current to three hundred twenty volts for the entire plant. Within the last year three new transformer stations which receive current from Radziankow Mine or from the town of Karf [redacted]

25X1

[redacted] The transformers were purchased from the DDR. Approximately in May 1956, a set of spare transformers was received at the mine from the DDR.

25X1

#### 5. Production of Nowy Dwor.

The daily production of raw ore is eight hundred tons. This ~~fig~~ <sup>normally</sup> amount goes entirely to Flotation Works No. 1 which in addition received one hundred sixty tons of raw ore per shift from the stock pile at Szarleje Mine.

Flotation Works No. 2 is normally dependent for supplies of raw ore from the Boleslaw Mine near Krakow which supplies eighty-four tons of ore per shift or two hundred fifty two tons per work day. The planned capacity of Flotation Works No. 2 is two hundred sixty tons per day. Should Boleslaw Mine fail to supply its daily norm, which happens often, raw ores are obtained from the stock piles at Szarleje Mine. Should both Boleslaw Mine and Szarleje fail to deliver the required tonnage of raw ore, the necessary amount is taken directly from the daily production of Nowy Dwor Mine itself. This divergence normally does not affect the required output of Flotation Works No. 1 inasmuch as No. 1 has an allotted stock pile of ore which Flotation No. 2 does not have.

The planned <sup>daily</sup> ~~production capacity~~ <sup>a finished concentrate</sup> of Flotation Works 1 and 2 together is fourteen and one-half railroad wagon loads each of 8.4 tons. Zinc concentrate contains up to forty-nine percent zinc. In recent months, the plan has rarely been fulfilled, - actual production varying between nine and fourteen wagon loads, the average being twelve. The failure to meet the planned output is caused both

SECRET

25X1

by the irregularity of supplies of raw ore from Boleslaw and by inferior production at Nowy Dwor Mine itself. There is a general tendency on the part of the foremen in all parts of the mine to exaggerate or deliberately make false statements concerning the output of their various sections in order to meet the established norm. Thus, the pits for instance frequently supply to the two Flotation Works, raw ore full of rock and the Flotation Works in turn produce concentrates containing thirteen to fifteen percent water, whereas the accepted water content is only five percent. Also, instead of forwarding concentrates containing the minimum allowable forty-nine percent zinc they forward concentrates of <sup>thirty</sup>~~forty~~-five percent zinc. Occasionally these frauds are discovered by the Central Mining Administration in Katowice and appropriate measures taken to assure the proper fulfillment of the norm. However, since no on-the-spot control of production is exercised by the central authorities, falsification of production figures continues. <sup>Daily</sup> Production figures for the previous twenty-four hour work day are cabled from Nowy Dwor to Katowice at 0700 hours of the following day and arrive in Warsaw by approximately 0900 hours.

Nowy Dwor produces 16.8 tons of lead concentrate per day with a content of fifty-sixty percent pure lead. The concentrate normally contains 8 to 9 percent of water, although the established <sup>allowable</sup> maximum is 5 percent. However, the established norm for lead concentrate production is almost always fulfilled.

SECRET

5. Flotation Plant No. 1

Sanitized Copy Approved for Release 2010/02/22 : CIA-RDP80T00246A032400460001-1

5

~~But originally in 1950, Flotation No. 1 was completely dismantled~~

by the Soviets in 1945 and not replaced until 1949/1950. It is

equipped with six HUMBOLDT flotation machines, each of 20 "cells".

Of the six machines, four were installed in 1949/50 and the remain-

ing two in 1954. Since the time of their original installation,

an additional 10 "cells" have been added, making a total of

130 "cells" at Flotation No. 1. The HUMBOLDT machines were con-

25X1

structed at an unknown factory in Poland according to German

(Specifications?).

SECRET

## 6. Flotation Plant No. 2

25X1

Flotation Plant No. 2 of NOWY DWOR Mine consists of four HUMBOLDT machines each of 26 "cells", two mills of Soviet origin, and four classification devices, the latter having been installed at the end of June 1956. Flotation No. 2 is scheduled to receive two additional mills in the immediate future. Flotation No. 2 processes ore from the stockpiles at BOLESZAW Mine near Krakow, which amounts to a daily total of 11 narrow-gauge railroad cars each containing 8.4 tons. The ore is transported from BOLESZAW by rail, a fact which in winter leads to frequent interruptions inasmuch as the ore <sup>often</sup> arrives frozen and must be broken up by blasting before it can be processed. If the <sup>daily</sup> scheduled ~~norm~~ ~~from 1955~~ of 250-270 <sup>tons</sup> is not received from BOLESZAW, the deficiency is made up from the stockpiles at SZARLEJE.

## 7. Percentage of Zinc and Lead Content of Ores Processed at NOWY DWOR!

The percentage of the Zinc and Lead content of the ores processed at NOWY DWOR is as follows:

- a. Ore mined at NOWY DWOR proper has an actual zinc content of approximately 3.5% whereas according to the estimate of the Ministry of Mining it should contain 4.6%. Because of this difference Warsaw has within the last six months lowered the planned figures from 4.6% to 4.2%. In reality a maximum of 4% is achieved.
- b. Ore from the stockpiles at BOLESZAW is supposed to contain 8.5% of zinc but in fact it contains only 5.2%.
- c. The ores delivered from SZARLEJE contain 13% of zinc although according to the Mining Ministry plan, they contain only 5.6%. This difference aids the flotation section of NOWY DWOR considerably in fulfilling the norm.

25X1

## 8. Combined Production of Flotation Plants 1 and 2

the planned ~~total~~ <sup>one centise</sup> daily production of both flotation plants is 146 tons of zinc. Due to an obvious inability to fulfill this norm, the figure was reduced to 126 tons within the last several months. The actual <sup>daily</sup> production varies between 9 and 15 railroad cars, each holding 8.4 tons. ~~At~~ At the end of March 1956 total production averaged 14.5 cars per day. However, it varies according to season and to the quality of ores received, which means that it averages

SECRET



Sanitized Copy Approved for Release 2010/02/22 : CIA-RDP80T00246A032400460001-1  
~~XXXXXXXX~~, averages 12 car loads, per day. The zinc content never exceeds .45%.

7.

25X1

The daily production of lead is 33.6 tons <sup>concentrate</sup> with a content of 54% lead, which fulfills the specifications of the norm for NOWY DWOR.

There is no production of "markazyt" at NOWY DWOR because the ore extracted there has a sulphur content of only 5-6% whereas foundries will accept no ore for processing which has a sulphur content of under 36%.

25X1

#### 9. Distribution of Zinc and Lead Concentrates from NOWY DWOR.

Both zinc and lead concentrates from NOWY DWOR are forwarded for further processing to various foundries, such as RADZIONKOW, SILESIA and KUNEGUNDA. [ ] there is no scheduled delivery plan to any ~~xx~~ of these foundries, the concentrate being forwarded on an ad hoc basis to any one of them.

25X1

[ ] nothing concrete concerning the end distribution of the finished products, [ ] it is generally assumed by "everyone" in the industry that the greatest part of

25X1

production is shipped to the Soviet Union. Approximately in June 1955, [ ] distribution of Polish lead and zinc, formerly the function of a joint Polish-Soviet board, was made the sole responsibility of the Soviet members thereof.

25X1

#### 10. Stockpiles of Zinc and Lead Ores in the Bytom Area.

Prior to 1945, the German <sup>mining</sup> administration in the Bytom area had decided that the continued exploitation of NOWY DWOR Mine was too expensive in view of the low grade of ore extracted there.

25X1

[ ] only because the mine was subsidized by the Nazi state, which spared little expense in its efforts to extract whatever lead and zinc it could for ~~the~~ war ~~effort~~ production, did it remain open). Accordingly, the complex of small lead and zinc mines around Bytom began to receive considerable attention. These are: NOWO WIKTORKA (ex-NEUE WIKTORIA), FRIEDRICHSGRUBE (Polish name unknown), MARIJA (same in German) and ELZBIETA (ELISABETHE).

In 1945, during the dismantling of Silesian industry by the Soviets, the water pumps were removed from all these mines in consequence of which they rapidly filled with water, the timbers in the pits collapsed and the mines became unworkable. The Polish mining ad-

25X1

ministration is now planning to reopen these mines, all of which are <sup>already</sup> connected ~~underground to~~ NOWY DWOR or can easily be connected underground to ~~the~~ the pit shafts at NOWY DWOR. [ ]

[ ] this will not be accomplished in less than two years,

SECRET

25X1



all these branch  
mines are richer in ores than NOWY DWOR, which is practically  
exhausted. ( ) estimate the life span of NOWY DWOR

25X1

25X1

25X1

already  
not profitless to continue work at NOWY DWOR proper, a fact which  
does not seem to deter the Polish administration).

At present the Polish administration has succeeded in pumping  
some water out of NOWO WIKTORKA and is in the process of rebuilding  
some of the underground workings. A new shaft head has been installed,  
complete with shaft tower and hoisting apparatus. At present no ore  
is being extracted, the work being concentrated on rebuilding.

In addition to the stockpiles of ores at SZARLEJE near Krakow, there  
exist stockpiles at NOWY DWOR, NOWO WIKTORKA, FRIEDRICHSGRUBE, ELZBIETA,  
and MARIA branch mines. The stockpiles at NOWY DWOR and NOWO WIKTORKA  
date from 1840 and 1850 respectively and have lain untouched since  
the original extraction process was finished. Shortly before WWII,  
the German administration began analysis of stockpiles in the  
Silesian area but had completed only that at SZARLEJE before 1945.

The analysis at SZARLEJE showed that the pile contains a high per-  
centage of good quality ore which had been ignored in the past  
because of an inability to extract the zinc and lead with processes  
then known. Since the end of the war the Poles have analyzed the  
other stockpiles and found them all to contain significant quantities  
of quality ore. ( ) estimate the percentage of zinc 25X1  
and lead therein except at SZARLEJE and NOWY DWOR, the former con-  
taining up to 13% and the latter 8%. It is estimated that the piles  
at SZARLEJE and NOWY DWOR will last "somewhat more than ten years",  
while those at the other branch mines cited will last less, being  
smaller (no estimate possible).

As an indication of the importance which the Poles attach to  
these stockpiles, the following incident is cited: Approximately  
one year ago, material from the ELZBIETA stockpile was used for  
road construction in the Bytom area. When it was found through  
analysis that the stockpile contains considerable zinc and lead of  
good quality, the road was ripped up and the material returned to  
the pile. Thereafter a general order was issued by that no material  
from stockpiles may be used in road or railroad construction.

SECRET

Transport of ores from Bolesław are never effected directly to Nowy Dwór. The supplies go first to Marchlewski and Orzeł Biały plant by normal railway facilities. At these plants the ores are quarried and only thereafter distributed to Nowy Dwór by a narrow gage track.

This system involves a twofold liability to imponderables. For, either Bolesław fails to get a sufficient allocation of rolling stock to lead their materials in time or the small gage railway from Marchlewski and Orzeł Biały has no waggons available for transportation of the material to Nowy Dwór. On the latter track it sometimes happens that trainloads derail in which case the entire track is out of use for 24 hours causing a complete jam in the supply.

25X1

SECRET

The transport of concentrates from Nowy Dwór to the foundries almost never occasions any jams. Concentrates are shipped via the narrow gauge track to the recipients. For this purpose waggons are used which first unload ores. There is a direct connection with the foundries in question like Lipiny, Kunegunda, Silesia etc.

#### Duration of shifts and wages of workers and staff.

The three shifts run from 6-2, 2-60 and from 10- 6 o'clock respectively. Sundays are almost always working days for which a 100 % bonus in wages is granted.

The average wage of a miner at Nowy Dwór is 500-600 zł. a month and it seldom gets up as high as 1200 zł.

Qualified workers above surface receive 1000-12000zł plus a bonus. Women employed here get the same pay as men.

a foreman /sztygar /in the mine gets 1300 zł.

a chief foreman - 1400 zł /Fahrtsteiger /

a first foreman = 1500 " /Obersteiger/

A manager get 2000 zł. /Betriebsfuehrer/.

Above surface a flotation foreman get 12-1300 / no bonus/.

a Betriebsfuehrer 1700-1800 zł

employees of the administration receive 800-900 zł.

A director gets 3000- 5000 and sometimes 6000 zł. including a bonus for economies.

#### Description of objects of Nowy Dwór plant.

The building of flotation I is 35 meters high and that of flotation II is 28 meters high. The chimney reaches 36 meters and the hauling scaffold 35-36 mtr.

The bath is a 4 store building. The new administration building is a 4 store building and the old one a one-store house.

All workshops have one floor.

The stockpile is 18 mtr high and the old one 24 mtr. high, flat on the top. The length is 900 mtr and the width 400 mtr.

SECRET

The striking difference in the wages of ore and coal miners to the disadvantage of the ore-miners reflects in a constant tendency by the latter to pass over to coal mines. At present wages are better at coal mines because nobody likes to work there outside of the mining profession. In order, however, that ore miners can not abandon their mines the coal mines are under pressure by the government forbidden to employ them. There were times when wages in ore mines equalled those of coal mines, and this may happen again, arbitrarily as these matters are handled by the administration. As a rule wages in ore mines go up when there is a shortage of manpower.

25X1

**SECRET**

SECRET

125X1

Near the Czech border the Poles are erecting an arsenic plant. Galleries are ready to be exploited. Now a flotation is being built and a washing plant. For this purpose 2 engineers from Nowy Dwór were delegated to that place. [REDACTED]

25X1

[REDACTED] this is the first mine of that kind in Poland.

25X1

Huge barracks near Dimitrof mine in Pytom, which were formerly used by the Germans for Russian POW and later for Polish soldiers, are now occupied by civilian prisoners and German soldiers with high prison terms. Polish prisoners working in the mines get their terms reduced by a half, and they get a <sup>salary</sup> ~~stipend~~ for the work which is paid to them after expiry of sentence.

#### Distribution and allocation of coal.

A miner in a coal mine gets 6 tons per year, gratis, the amount of 40 zł being added monthly to the salary for tax purposes. A zinc miner gets 4 tons per year. Miners not using their coal can cede it to the mine for which they get a coupon for a radio or some other luxury item, which normally cannot be had. 1 ton of coal costs black 280 zł. This is the source which for that price the non-miner has to get his coal from. There is no regular allocation for the average citizens. Those get their share from the burning stockpiles, where although officially forbidden nobody seriously prevents them from picking out the coal.

Retired miners get 2 tons per ~~xxxxxx~~ year.

Old and very poor people get 5-10 hwt from the municipal administration.

25X1

Poles have made the attempt to replace the Humboldt machines by some more advanced type which they have constructed themselves. On the initiative of the old directors of the zinc mines who were replaced from top positions by communist directors, a construction & and drafts bureau was created at Katowice. This bureau is supervised by the Central Board.

25X1

25X1

The actual and unsurmountable drawback, however, is the stirring shuffle / Rührer/ attached to the shaft. The stirrer is open from the bottom and thus gets too much air which hampers seperation of blends from wastes. The fastening of a different stirrer is impossible because of the construction of the cells. ~~Formerly the material was conducted into the cells from the bottom where as the new~~  
~~xxxxxxx~~

The machine~~x~~ is known to have been very expensive.

Mills in use at Nowy Dwor are all of some Russian make ,judging by the inscription, which could eventually be of a DDR origin. Their construction does not deviate from the Krupp type, formerly used at Nowy Dwór , and presently still used in almost all other flotations. I.e. the scoop wheel resembles the Krupp scoop .It takes the material from the surrounding trough. The neck of the mill~~x~~ is the same as Krupp's .

The container is provided with manganese plates along the walls to prevent a wear off of the mantle. These plates are made of extremely good material, 21/2 - 3 % manganese. They last 2 years. Humboldt Krupp types had beams /Balken/ instead of plates. They wore off after one year because of inferior material. Another characteristic of the new mills is the contents of

# SECRET



balls .Formerly the mills contained 8 tons of balls of 40, 60, 80 mm .Now there are 12 tons of 60, 80, 100 mm balls. Thus the mills are filled up to the middle.

In contrast to the Frupp type the new mills have a intermediate wall in the discharging mechanism. This wall is made out of plates /Segments/. There are 16 segments with 25 mm slits through which the entire material flows out. At the exit the crude material is being directed to the Klassierer from where it gets back into the scoop wheel.

The intermediate wall makes the existence of a filter at the exit superfluous. Formerly the filter used to prevent balls from flowing out.

The capacity of these new mills is 70 % more than old mills. Dimensions of mills: diameter of  $2\frac{1}{2}$  mtr, length  $3\frac{1}{2}$  mtr, The technical working instructions issued by the Russians stipulates that the mills should be operated with a meterail not thicker than 10 mm while in reality 100 mm are processed. Despite this the mills never break down. They are the best piece of equipment of the entire flotation. Both mills and flotation machines would be able to increase output if it were not for the irregular supply. At present the mills are far from being overburdened.

Nowy Dwor has 4 such mills at the new flotation and 2 at the old with 3 more being planned there.

The motor for the mill has been supplied together with the mill proper. It is placed outside the mill and operates the mill through a gear wheel running through the mill.

-----  
Sorting machines / Klassierer/.

They were introduced 2 years ago and are by now available for all mills. Their inventor is engineer Mrózek. Their purpose is the dehydration of the material ,which is why they are slope. They have a motor of their own.

Process: after it receives a charge from the mill the sorting machines starts to revolve. A spiral spring presses the thicker material toward the exit from where it flows into the trough of the scoop wheel of the mill. The fine material leaves the apparatus on the opposite side.

The machine is ~~xxxxxx~~ filled with water up to the middle of its length. The second half, ~~xxxxxx~~ through which the worm presses the material toward the exit, is dry .

The grip on the sketch serves as mechanism preventing breaks or ruptures which could occur at starting the machine with too much material already present. In such a case the grip lifts the shaft with spiral spring above the level of the material within the machine.

The capacity of the sorting machine is bigger than that of the mills. In principle they are adjusted to the dimensions of the mills. A break of the sorting machine would naturally ~~xxxxxx~~ necessitate the halting of the pertinent mill, but this almost never happens

The worm in the casing has a diameter of 300 mm.

SECRET

The rest of the equipment is much the same as before the war. There are the so-called Eindicker which are basins for the concentrates which are by the help of diaphragm pumps pumped into the filters. The filters have had Russian inscriptions but also an inscription of firm Wolff Magdeburg /drum filter/. For the dehydration of the filters there are vacuum pumps, which are very sensitive because of the bad material they are made of.

-----  
With reference of rough sketch of Nowy Dwór plant.

The main entrance for workers and vehicles is that near the door-keeper. The other entrance is only used by vehicles and carriages leaving the plant.

Boiler-house .It contains 3 flametube boilers /Flammrohrkessel/. It is supplied with second rate coal from outside. The boiler station produces steam for the laboratory and for the heating of all buildings, as well as for the heating of flotation stacks.

Transformer station - there are 3 new stations receiving current from Radzinkow mine or from Korf. The transformers were obtained from the DDR. A set of spare transformer has arrived lately . The transformers transform the 6000 V current into 320 V for the entire plant.

The laboratory - was completely emptied by the Russians. It is now re-equipped .There is nothing special about it.

-----  
Flotation process.

The ores from the shaft are directed first to a swinging device which swings them into filter 1 and 2. From there the material falls into supply bunkers 1 and 2, whereas the raw material passes on to the rude-quarrying devices and from there to filters 3 and 4. The sinking material /Durchfallmaterial/ goes to supply bunkers 1 and 2 ,and the rude material to the Symon quarries 1 and 2.

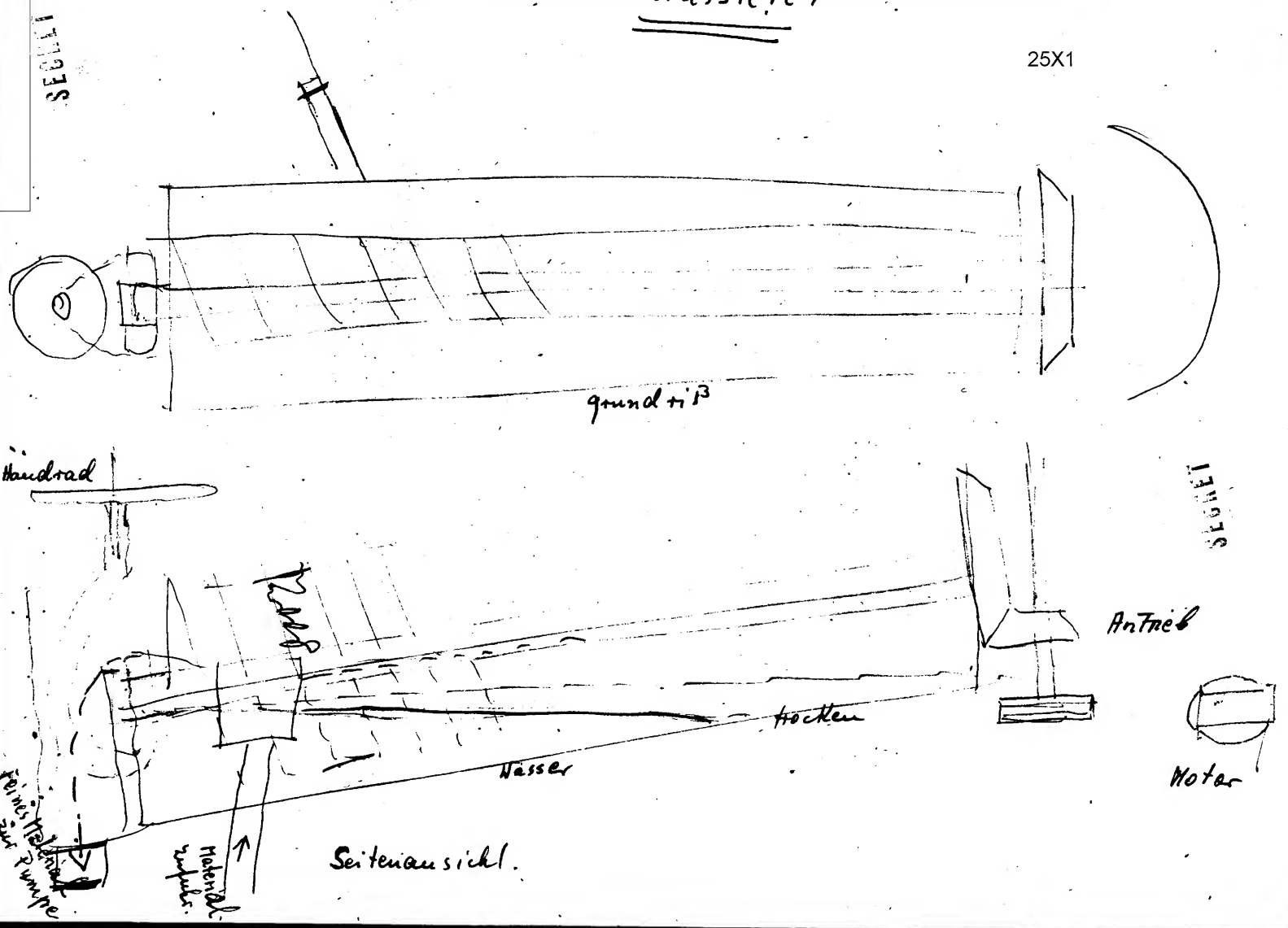
Next it goes to the supply bunkers for the ball-mills <sup>over</sup> ~~across~~ an elevator. From the mill the material passes to the sorting machine /Klassierer/ which most of it is served on the flotation machine while the gross material is redirected to the mill. At the flotation machines the material is being separated into zinc and lead ores by flotation apparatuses. Next the sorted ~~xxxx~~ ~~the~~ material is going to the respective containers /Eindicker/. Finally the product is being pumped by diaphragm pumps into filters and from there is goes directly on ~~waggons~~ swinging lorries transporting the stuff to the waggons. The lorries can load 0.6 tons.

SECRET

Flotation II is additionally equipped with a "hydroseparator" which flotation I is lacking for want of space. The big advantage of the hydroseparator is that slacks /wastes/ can directly be shifted to the sorting apparatus /Klassierer/ from where the overflow goes to the "Eindicker" which is located outside the flotation. Flotation I on the contrary passes the slacks directly on to the Eindicker so that in order to undergo the indispensable sorting process on the Klassierer they are subject to a longer and complicated transportation route.

Klassierer

25X1



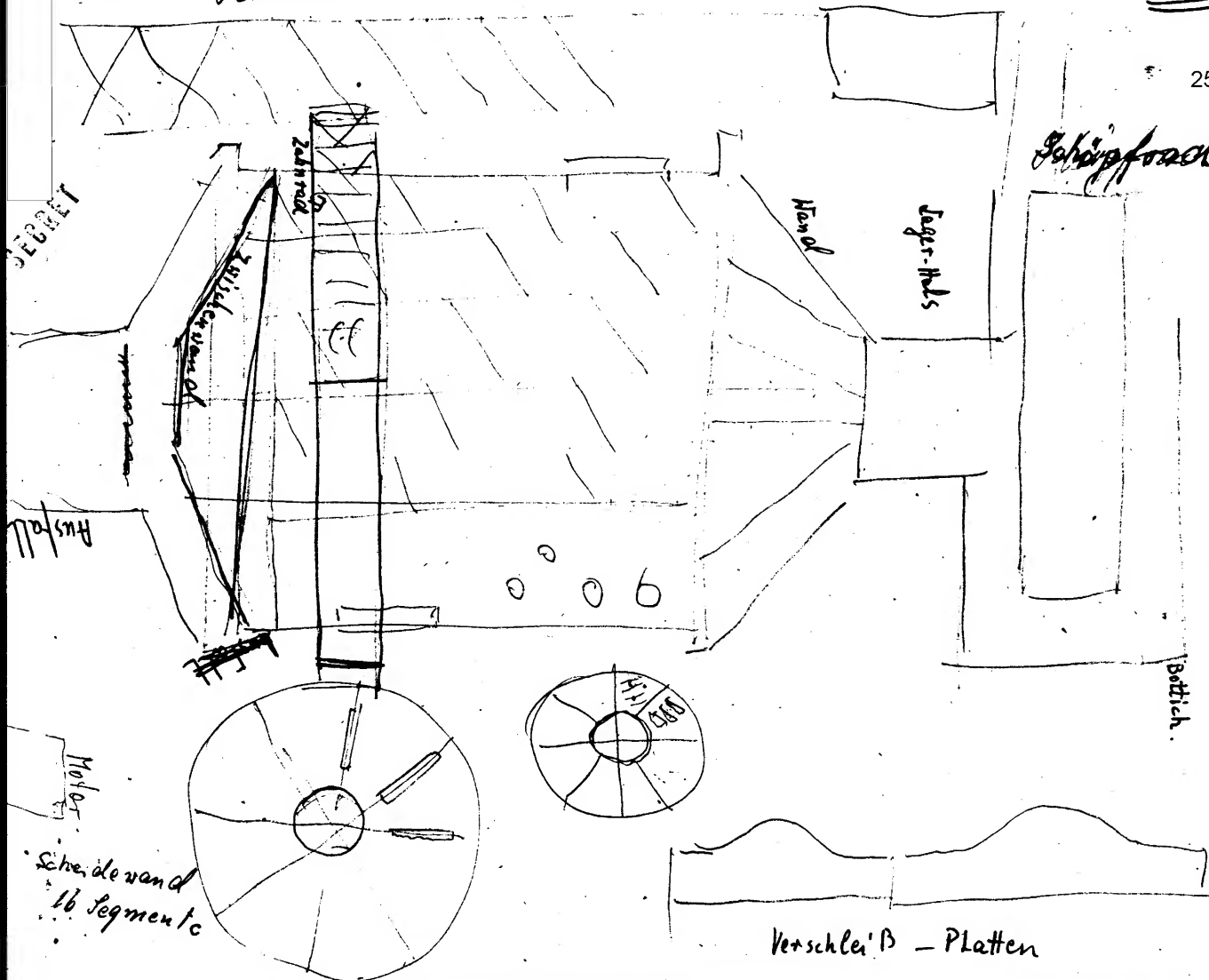
*Wasserr*

Mühle  
russ. Herkun. St.

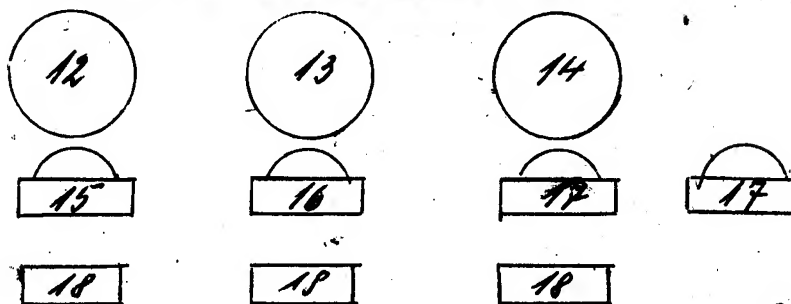
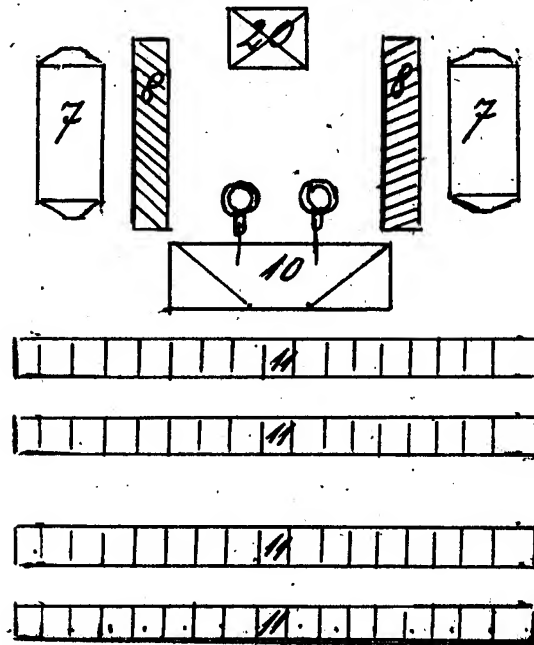
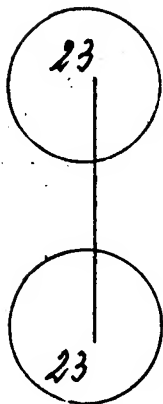
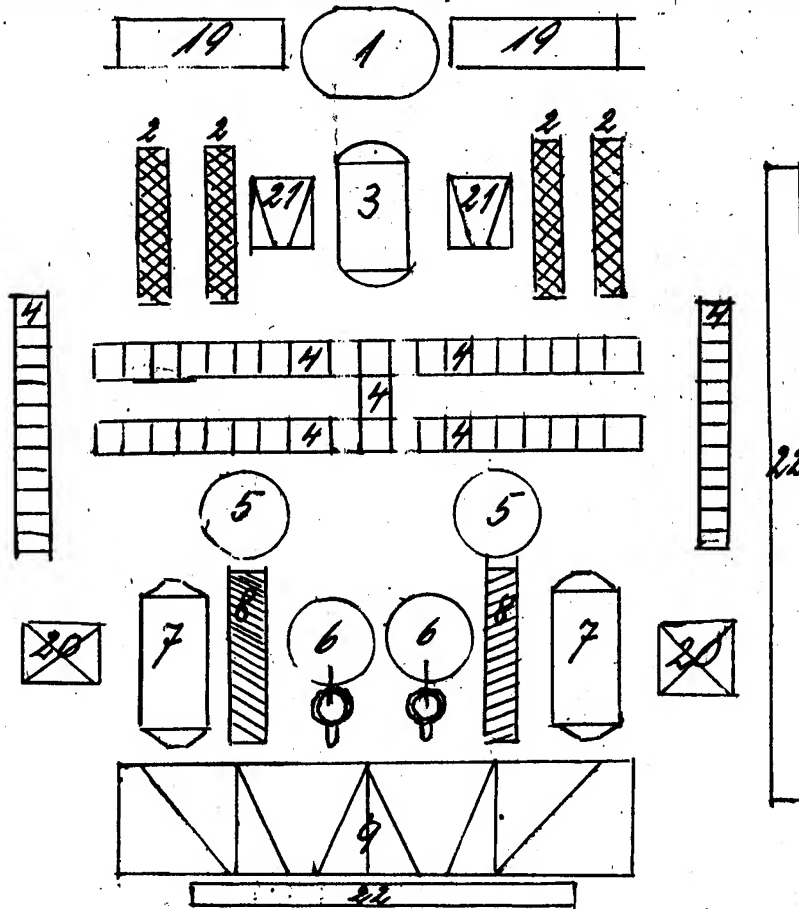
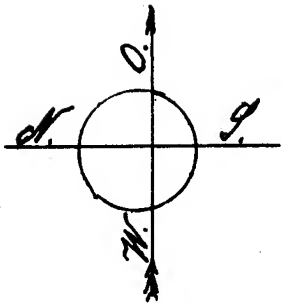
25X1

*Schäpprad*

SECRET



SECRET 25X1



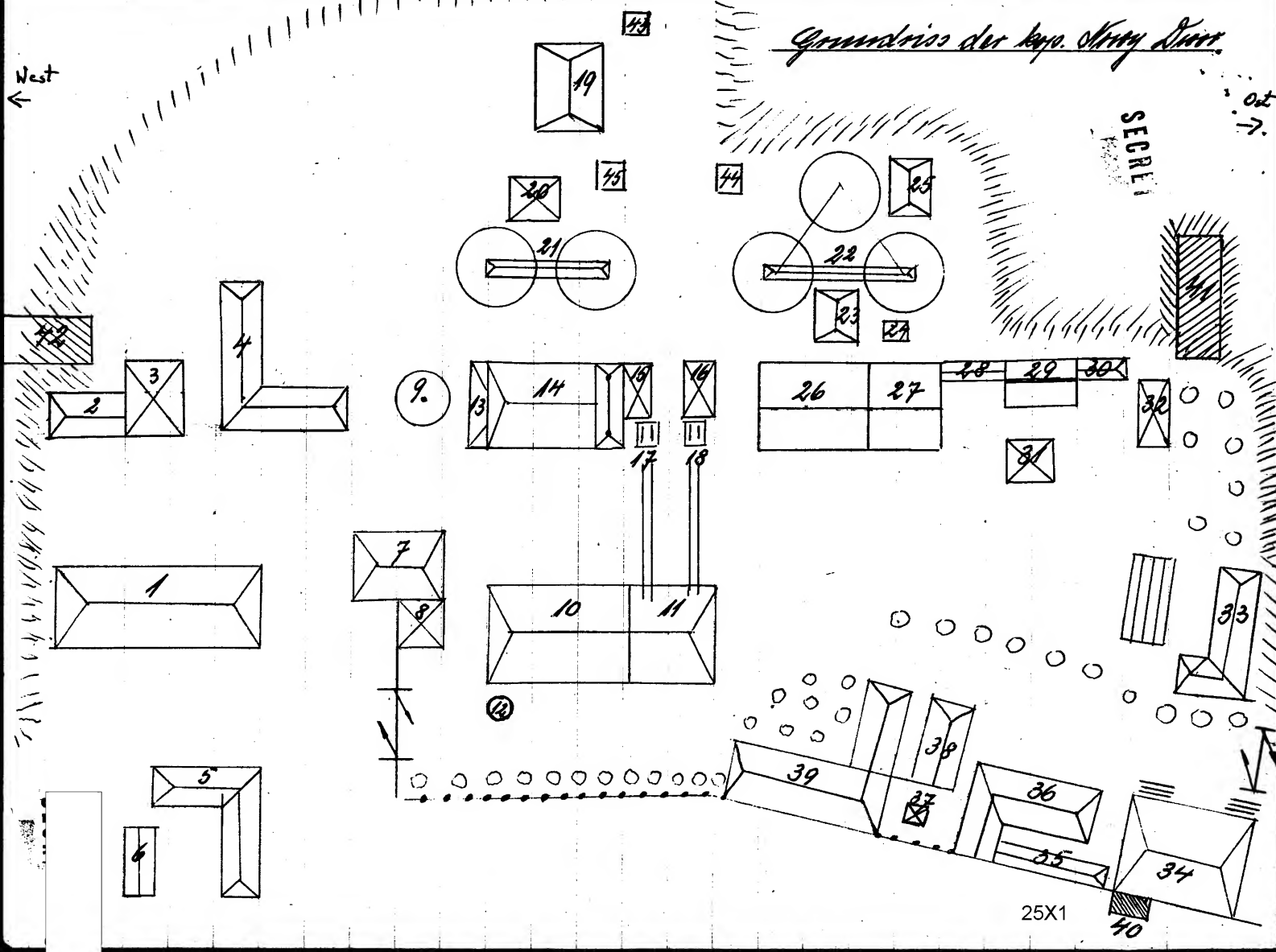
*Stammbaum der Flot. I Kap. Norway Moor.*

SECRET



25X1

**Page Denied**



**Page Denied**

Next 3 Page(s) In Document Denied